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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,730	01/10/2005	Kurt Erne	121940	8620

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EXAMINER	
RATCLIFFE, LUKE D	
ART UNIT	**PAPER NUMBER**
3662	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/516,730	ERNE ET AL.	
	Examiner	Art Unit	
	Luke D. Ratcliffe	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims 25-48

4)☒ Claim(s) ~~1-48~~ is/are pending in the application.

4a) Of the above claim(s) ~~24~~ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

The priority to PCT/EP03/05206 is invalid because the PCT was filed after November 11, 2000 but when published was not published in English.

Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Switzerland on 06/07/2002. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

Drawings

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25, 29, 28, 30, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The wording of these claims

using the word "preferably" or "in particular" leaves these claims vague and indefinite as to what is being claimed.

Claims 26-40 are rejected as well because they all include the limitations of the parent claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25-30, 41, 42, 44, 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Ricklefs (DE 19854812).

Referring to **claims 25, 41, 42, and 48**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23).

Referring to **claim 26**, Ricklefs shows an image of the course of at least a part of a substantially flat interface of the first medium is reproduced indirectly or directly on the camera (column 4 lines 15-40).

Referring to **claim 27**, Ricklefs shows a first medium that is a liquid and the interface is a liquid horizon (figure 1).

Referring to **claim 28**, Ricklefs shows a receptacle that is designed as a cylindrical can which is preferably half-full (figure 6 and 7).

Referring to **claim 29**, Ricklefs shows a second medium that is a gas, a solid, or a liquid. This is inherent because all matter falls into these categories.

Referring to **claim 30**, Ricklefs shows a first and a second medium that have a different transmission coefficient. This is inherent because two separate materials will have a different transmission coefficient.

Refering to **claim 44**, it is inherent that the angle of the first medium and the image and the absolute position of the first medium in the image are taken into account when determining the inclination angle because not doing so would result in an erroneous result.

Referring to **claim 46**, Ricklefs shows determination of errors due to temperature effects and/or substance losses of at least the first medium are taken into account, in particular eliminated (column 4-5).

Referring to **claim 47**, it is inherent that when determining the inclination angle of a substantially flat surface a substantially flat image will be produced.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 31-39 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricklefs (DE 19854812) in view of Braunecker (EP1491855).

Referring to **claim 31**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a first medium that is a pendulum-like solid.

Braunecker shows a first medium that is a pendulum-like solid (figure 7a). It would have been obvious to modify Ricklefs to include the pendulum-like solid as taught by Braunecker because this allows for a simple way to level the first medium.

Referring to **claim 32**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a

receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a first medium that is a pendulum-like solid. However he does not show a radiation source that is a semiconductor laser or LED.

Braunecker shows a radiation source that is a semiconductor laser or LED (figure 6 Ref 11). It would have been obvious to modify Ricklefs to include the semiconductor laser or LED taught by Braunecker because this is a common radiation means used in this application and adds no new or unexpected results.

Referring to **claims 33 and 43**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However

Ricklefs does not show a radiation source and camera that are arranged so that the radiation in the region of the first medium is passed substantially parallel to a surface of the first medium.

Braunekcer shows a radiation source and camera that are arranged so that the radiation in the region of the first medium is passed substantially parallel to a surface of the first medium (figure 6 and 7a). It would have been obvious to modify Ricklefs to include the direction of the radiation substantially parallel because this allows for a consistent absorption of the radiation by the surface.

Referring to **claim 34**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a receptacle that is mounted indirectly or directly on the camera.

Braunecker shows a receptacle that is mounted directly on the camera (figure 7a). It would have been obvious to modify Ricklefs to include the mounting of the receptacle as taught by Braunecker because this allows the camera to be more rigid with respect to the receptacle.

Referring to **claim 35**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a first flat transparent surface, and a second transparent surface.

Braunecker shows a first flat transparent surface, and a second transparent surface, it would have been obvious to modify Ricklefs to include the surfaces taught by Braunecker because this allows the light to be directed to the proper measurement point without disturbance.

Referring to **claim 36**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and

the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a two-dimensional detector surface which is oriented parallel to the first surface and/or to the second surface of the receptacle.

Braunecker shows a shows a camera that has a two-dimensional detector surface which is oriented parallel to the first surface and/or to the second surface of the receptacle (figure 6). It would have been obvious to include the camera orientation because it is a functional equivalent.

Referring to **claim 37**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a radiation source and a camera that are mounted on a common base, perferaly a circuit board.

Braunecker shows a radiation source and a camera that are mounted on a common base, perferaly a circuit board (figure 6 and 7a). It would have been obvious to mount the camera and the radiation source in a common base because this allows for a

more stable environment to make the measurement when there is a large change in temperature.

Referring to **claim 38**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a radiation source and camera that are arranged so that the radiation produced is emitted perpendicularly to the surface of the base and the receiving means of the camera is oriented perpendicularly to the surface of the base.

Braunecker shows a radiation source and camera that are arranged so that the radiation produced is emitted perpendicularly to the surface of the base and the receiving means of the camera is oriented perpendicularly to the surface of the base (figure 7a). It would have been obvious to modify the base of Ricklefs to adapt to the base of Braunecker because this is a base that allows for the measurement of an object only has to align with the camera and the light source will instantaneously be aligned.

Referring to **claim 39**, Ricklefs shows an optical inclinometer with a radiation source (column 4 line5), an inclination–dependant medium (column 3 line 8), a

receptacle for the first medium (column 4 line 21), a camera (column 4 line 21), and an evaluation unit for determining the inclination (column 4 line 23). The radiation source and the camera are arranged such that, by means of the radiation, an image of the course of the boundary layer is formed on the camera (column 4 lines 37-40), the camera and evaluating unit are formed so that the image is recorded by the camera and the course of the interface is resolved and the course of the interface is evaluated by the evaluation unit for determining the inclination (column 4 lines 17-23). However Ricklefs does not show a beam path to the radiation source to the camera that has at least one deflecting element.

Braunecker shows a beam path to the radiation source to the camera that has at least one deflecting element (figure 6 and 7a). This is obvious because of the pervious stipulations on the position of the camera and the light source and adds no new or unexpected results.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ricklefs (DE 19854812).

It would have been obvious to include a signal output on reaching or exceeding a predetermined inclination value, this is the same as a threshold comparator and these are well known in the art and would be obvious to use such an angle measurement instrument to make a threshold comparator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke D. Ratcliffe whose telephone number is 571-272-3110. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LDR

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